



United States Environmental Protection Agency

One Congress Street, Suite 1100 (HBT)
Boston, MA 02114-2023

November 3, 2004

Mr. Fred Evans
Engineering Field Activity - North East (EFANE)
10 Industrial Highway, Code 182/FE - Mail Stop 82
Lester, PA 19113-2090

Re: *"Recommendations for the Intake Depth for Groundwater Sampling Pumps to be Installed in the Site 16, HRC® Pilot Test Project Stage II Wells,"* and
"Recommendations for the Sampling Depths for the Site 16 HRC® Pilot Test Injection Wells," Naval Construction Battalion Center Davisville, North Kingston, Rhode Island," dated October 14 and 21, 2004, respectively at the former Davisville Naval Construction Battalion Center (NCBC), Rhode Island

Dear Mr. Evans:

Pursuant to § 7.6 of the Davisville Naval Construction Battalion Center Federal Facility Agreement dated March 23, 1992, as amended (FFA), the Environmental Protection Agency has reviewed the subject document and comments are enclosed.

If you have any questions with regard to this letter, please contact me at (617) 918-1384.

Sincerely,

A handwritten signature in cursive script, appearing to read "Christine Williams".

Christine A.P. Williams
Remedial Project Manager
Federal Facilities Superfund Section

Enclosure

cc: Louis Marccarone, RIDEM
Richard Gottlieb, RIDEM (via e-mail only)
Bill Brandon, EPA (via e-mail only)
Marilyn Cohen, ToNK
Steven King, RIEDC
Kathleen Campbell, CDW (via e-mail only)
Jim Shultz, EA Engineering, Science and Technology

EPA Comments on the Site 16 Proposed Pump Intake Depths for HRC® Pilot Study

GENERAL COMMENTS

Review of these documents indicates that the proposed pump and sampling depths for the Stage II monitoring wells are generally located in appropriate locations. There were, however, several recommended changes as noted in the Specific Comments below. In regard to the proposed sampling locations for the injection wells, because there has been extensive soil logging, screening, and there will be extensive sampling of the groundwater in the aquifer around the injection points, and no significant soil gas screening results were encountered over the depth where the injection wells are screened, it is recommended that sampling for all of those wells be from the lower 1 to 2 feet of the screened interval as noted in the Specific Comments below in order to ensure consistency with the sampling approach given that chlorinated hydrocarbons are the contaminant of concern.

Additionally, a couple of observations are provided relative to the HRC® injection wells. First, it is not clear why such an intense soil screening and groundwater sampling program was/is being conducted for the injection well locations. It would appear that this effort, especially the groundwater sampling proposed is somewhat redundant given the location of injection wells in very close proximity to the monitoring wells. Sampling of groundwater from deep wells in the surrounding six monitoring well locations would appear sufficient given the small footprint of the injection area. While a “baseline” assessment of groundwater quality from the injection wells may be the intent, it should be noted that groundwater quality from those wells is likely to be significantly altered after the injection HRC®, even if the HRC® material were to be removed. The surrounding monitoring wells would appear to provide adequate and more reliable pre and post treatment groundwater quality data. Therefore, elimination of groundwater sampling and analysis would appear to be warranted to reduce cost to the Navy.

Second, it is not clear why rock was cored for the twelve injection well locations given that the injection wells were intended to only inject or apply HRC® into the deep aquifer and not bedrock. During previous comment by EPA and subsequent discussions it was understood that HRC® would not be injected into or applied to the bedrock. It is not clear that the core hole has been/will be grouted since no injection well logs were provided. For instance, for Injection Well INJ16-08D, the log describes soil to approximately 65 feet. The rock was cored from 68 to 78 feet. The screen interval is given as 54 to 64 feet. Therefore, there is some ambiguity as to whether it is the intent of the Navy to inject HRC® or install HRC® socks beyond the screen interval of the injection wells. Some information should be provided by the Navy to verify that the injection of the HRC® will not extend into the upper portion of the rock, or if it does, why this approach is being contemplated.

SPECIFIC COMMENTS

Recommendation for the Intake Depth for Dedicated Ground-Water Sampling Pumps to be Installed in the Site 16 HRC® Pilot Test Stage II Monitoring Wells.

EPA Comments on the Site 16 Proposed Pump Intake Depths for HRC® Pilot Study

MW16-66S: No change recommended.

MW16-66I: No change recommended.

MW16-66D: Recommend adjusting pump intake from 48 feet to 54 feet. While slight flame ionization detector response (without filter) were noted at 46 to 50 feet, the soil logs show orange brown iron staining from 52 to 56 feet.

MW16-66R: No change recommended.

MW16-67S: No change recommended.

MW16-67I: No change recommended.

MW16-67D: No change recommended.

MW16-67R: Recommend adjusting pump intake from 83 feet to 75 feet. Most fractures appear to be present from 65 to 80 feet. Also, highest inflow during pumping (excluding break near casing) is around 65 to 80 feet.

MW16-68S: No change recommended.

MW16-68I: No change recommended.

MW16-68D: No change recommended.

MW16-68R: No change recommended.

MW16-69S: No change recommended.

MW16-69I: No change recommended.

MW16-69D: No change recommended.

MW16-69R: No change recommended.

MW16-70S: No change recommended.

MW16-70I: No change recommended.

MW16-70D: No change recommended.

EPA Comments on the Site 16 Proposed Pump Intake Depths for HRC® Pilot Study

MW16-70R: Recommended adjusting pump intake depth from 81 feet to 70 feet. There is a major cluster of fractures around 65 to 70 feet. Also, most flow during pumping occurred from 65 to 80 feet.

MW16-71S: No change recommended.

NOTE: Review of the soil log for MW16-71 shows an FID response of 36526 at 42 to 44 feet. Is this a typographical error? The shallow screen was set at 28 to 38 feet and the intermediate screen was set at 46 to 57 feet.

MW16-71I: No change recommended.

MW16-71D: No change recommended.

MW16-71R: Recommend adjustment of the pump intake to 75 feet from 70.5 feet. A large number of fractures are present from 60 to 80 feet. Also, while there is a caliper inflection at 70.5 feet, there appears to be a larger inflection at 73.5 feet.

Recommendation for the Sampling Depths for the Site 16 HRC® Pilot Test Injection Wells

Because of the extensive soil screening conducted in the pilot study monitoring wells in the immediate footprint of the pilot test and monitoring wells screened in the deep interval of the aquifer at those locations, it does not appear necessary to collect additional groundwater samples from the injection wells. However, it is recommended that all sample locations, if samples are to be collected, be from the lower 1 to 2 feet of the injection well screen interval. Review of the soil screening results shown on the boring logs for the injection well locations does not provide significant indications that sampling from locations other than the lower portion of the well to take into account possible density stratification of chlorinated volatile organic compounds (CVOC) is warranted. Therefore, all sample locations should be consistent with being located at the lower one to two feet of the screened interval.

INJ16-01D: No change recommended.

INJ16-02D: No change recommended.

INJ16-03D: No change recommended.

INJ16-04D: The sample location should be lowered to 52 feet from 49 feet.

INJ16-05D: No change recommended.

INJ16-06D: No change recommended.

EPA Comments on the Site 16 Proposed Pump Intake Depths for HRC® Pilot Study

INJ16-07D: No change recommended.

INJ16-08D: No change recommended.

INJ16-09D: No change recommended.

INJ16-10D: No change recommended.

INJ16-11D: No change recommended.

INJ16-12D: The sample location should be lowered to 56 feet from 55 feet.